



Armed Forces College of Medicine AFCM



Pleura

Arterial Anastomosis of Upper Limb

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Ass. Prof of Anatomy

INTENDED LEARNING OBJECTIVES (ILO)



By the end of this lecture the student will be able to:

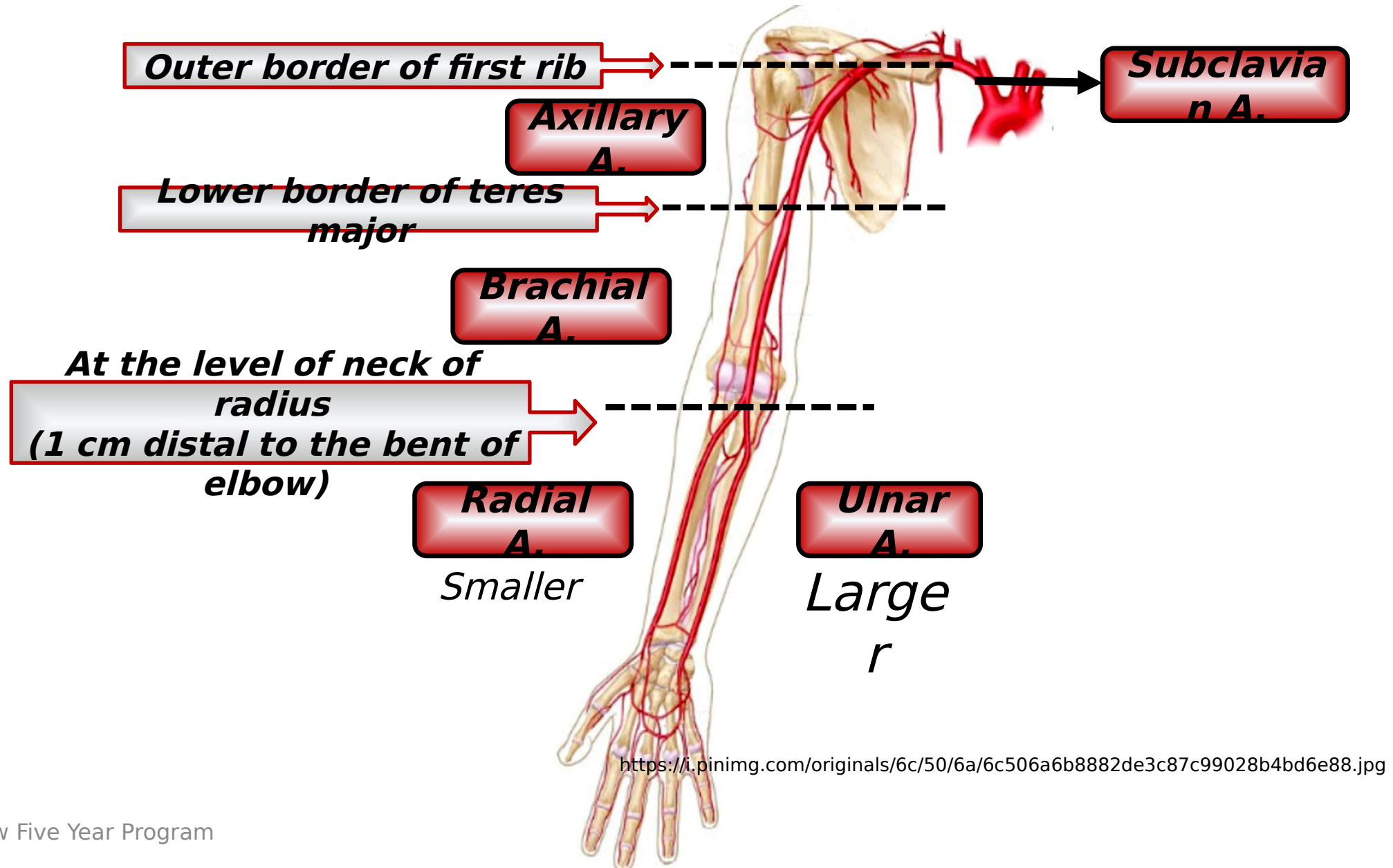
1. Discuss the arteries sharing in anastomosis around scapula, humerus, elbow & wrist
2. Predict the clinical significance of anastomosis of upper limb.

Key points



- 1. Arterial anastomosis around scapula & humerus and their clinical significance**
- 2. Arterial anastomosis around elbow & wrist and their clinical significance**

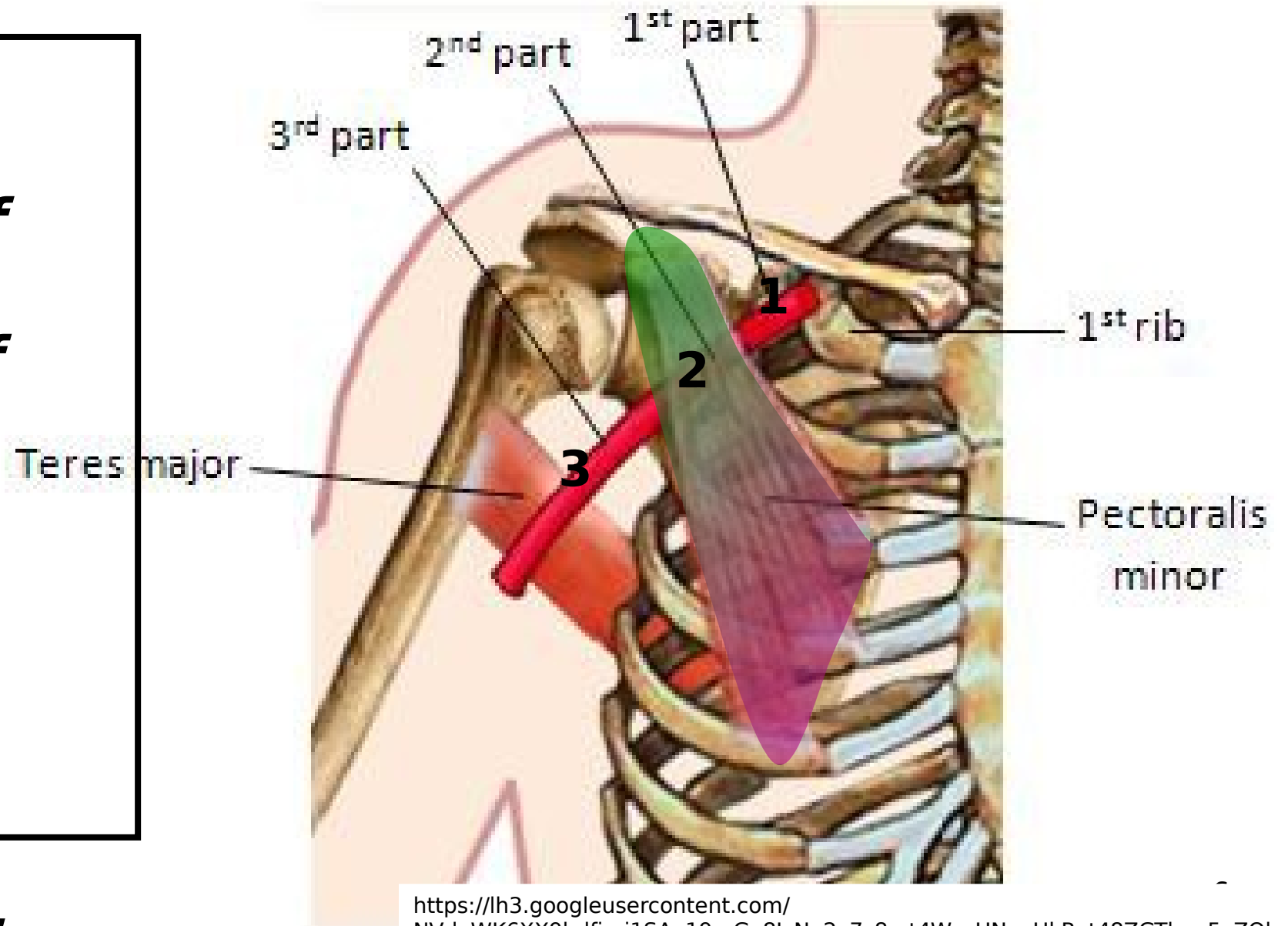
Arteries of upper limb



Axillary artery



- **Begins at the outer border of the first rib as continuation of the *subclavian artery*.**
- **Ends at lower border of the teres major as *brachial artery*.**



Branches of axillary artery



1. Superior thoracic

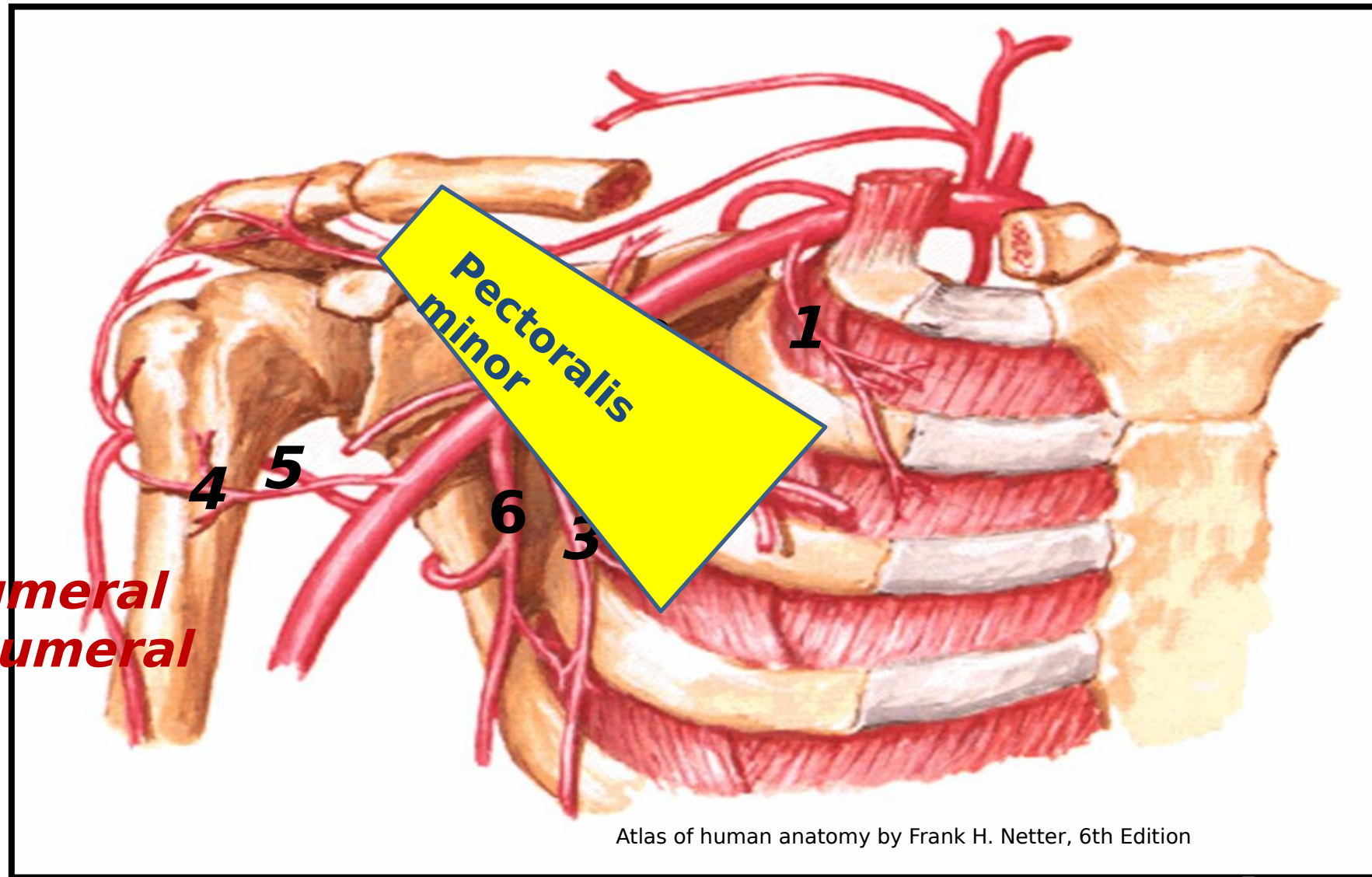
2. Acromiothoracic

3. Lateral thoracic

4. Ant. circumflex humeral

5. Post. circumflex humeral

6. Subscapular



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Anastomosis around scapula



- **Site:**

Deep to infraspinatus

- **Formation:**

1. Subscapular & circumflex scapular.

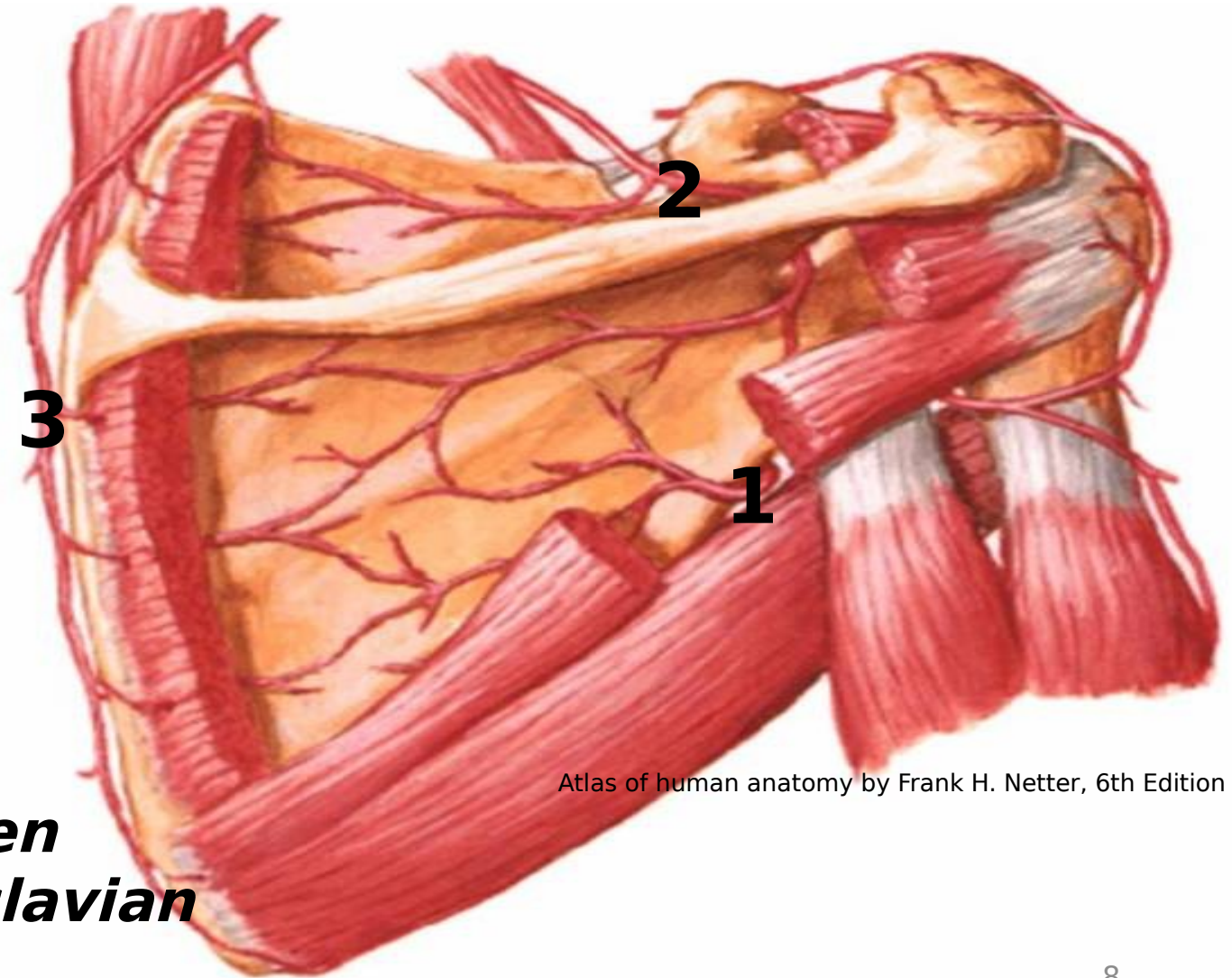
(3rd part axillary) (1st part subclavian)

2. Suprascapular.

(1st part subclavian)

Clinical importance:

Carry blood to upper limb when there is an occlusion bet subclavian & axillary arteries



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Anastomosis around humerus



- **Site:**

Around surgical neck

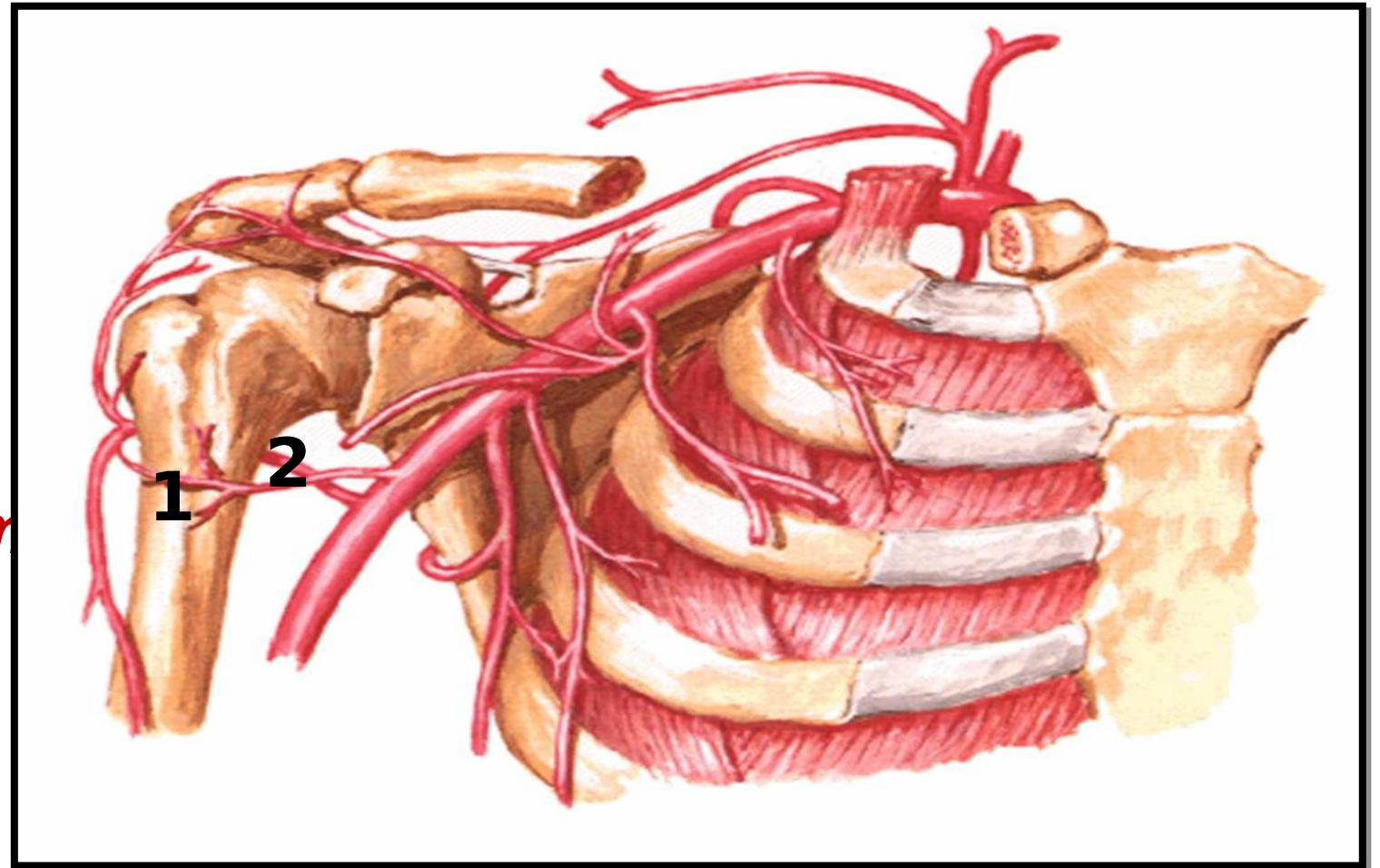
- **Formation:**

1. Ant circumflex hum

2. Post circumflex humeral.

- **Injury:**

Fracture surgical neck of humerus



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Lecture Quiz



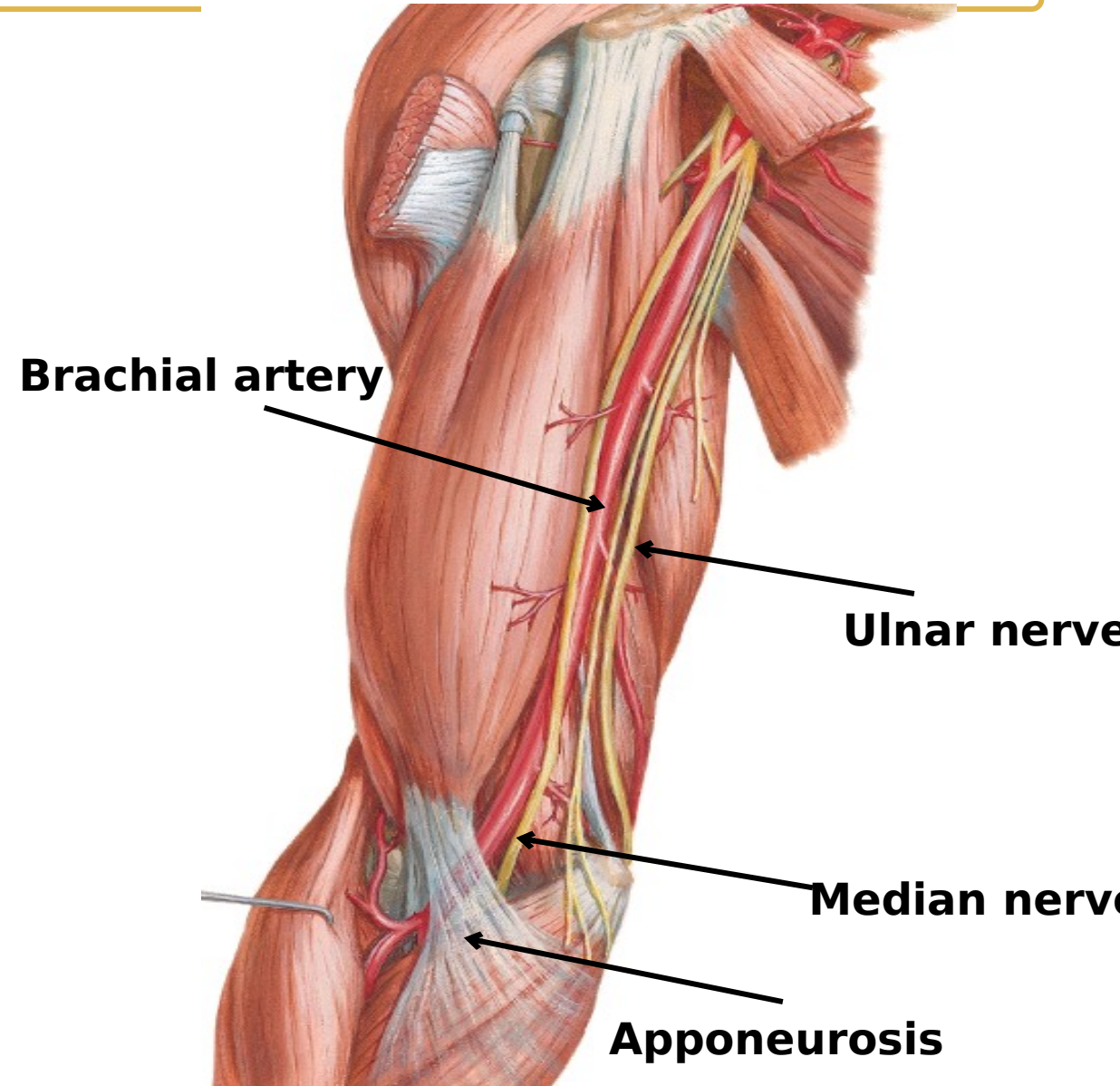
All of the following arteries share in the anastomosis around the scapula except:

- a) Suprascapular artery
- b) Thoracoacromial artery
- c) Subscapular artery
- d) Circumflex scapular artery

Brachial artery



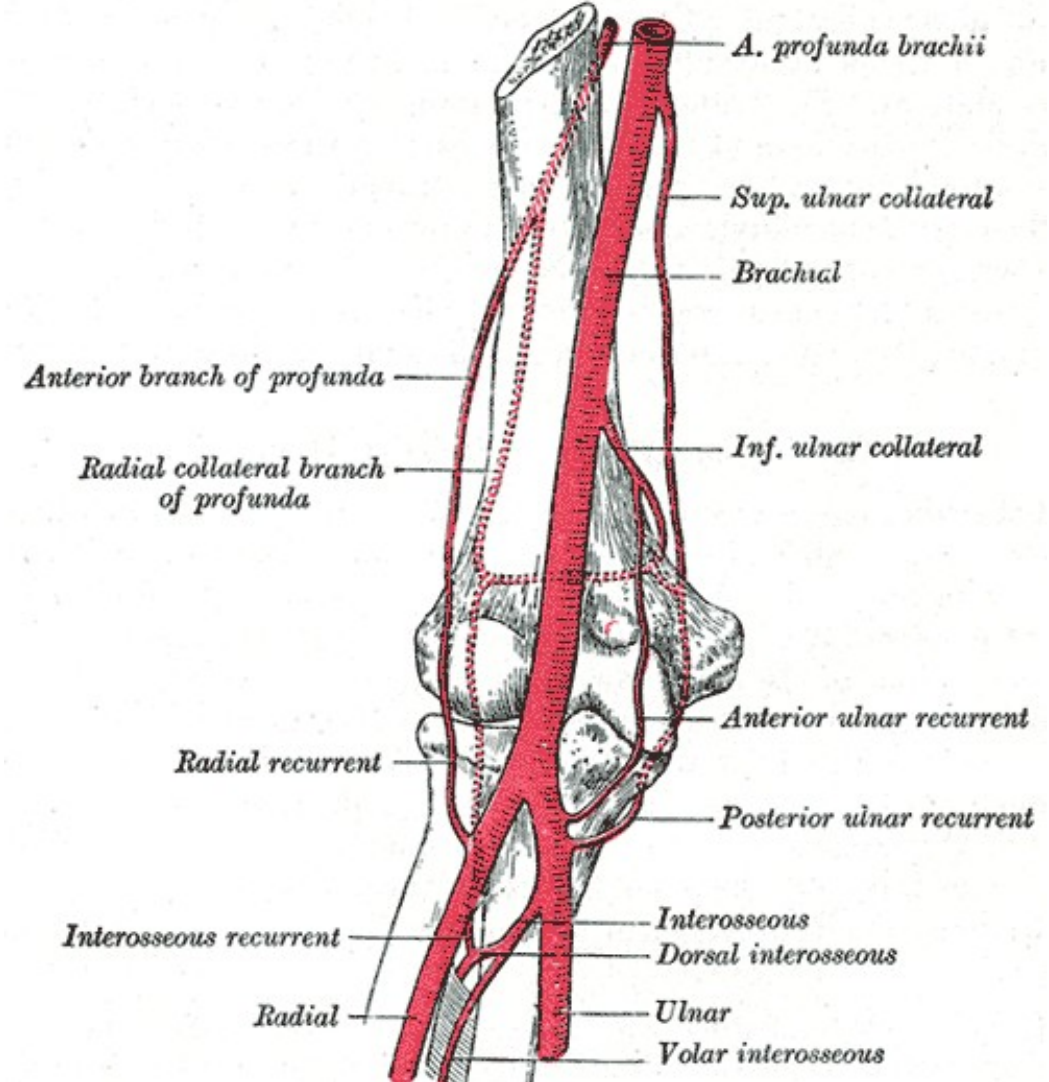
- **Begins as** continuation of axillary at lower border of **teres major**
- **Ends at** level of **neck of radius** by dividing into radial & ulnar arteries
- At elbow it is covered by **bicipital aponeurosis** which separates it from **median cubital vein**



Branches of brachial artery



- 1. Muscular**
- 2. Nutrient**
- 3. Sup ulnar**
- 4. Radial collateral**
- 5. Profunda brachii**



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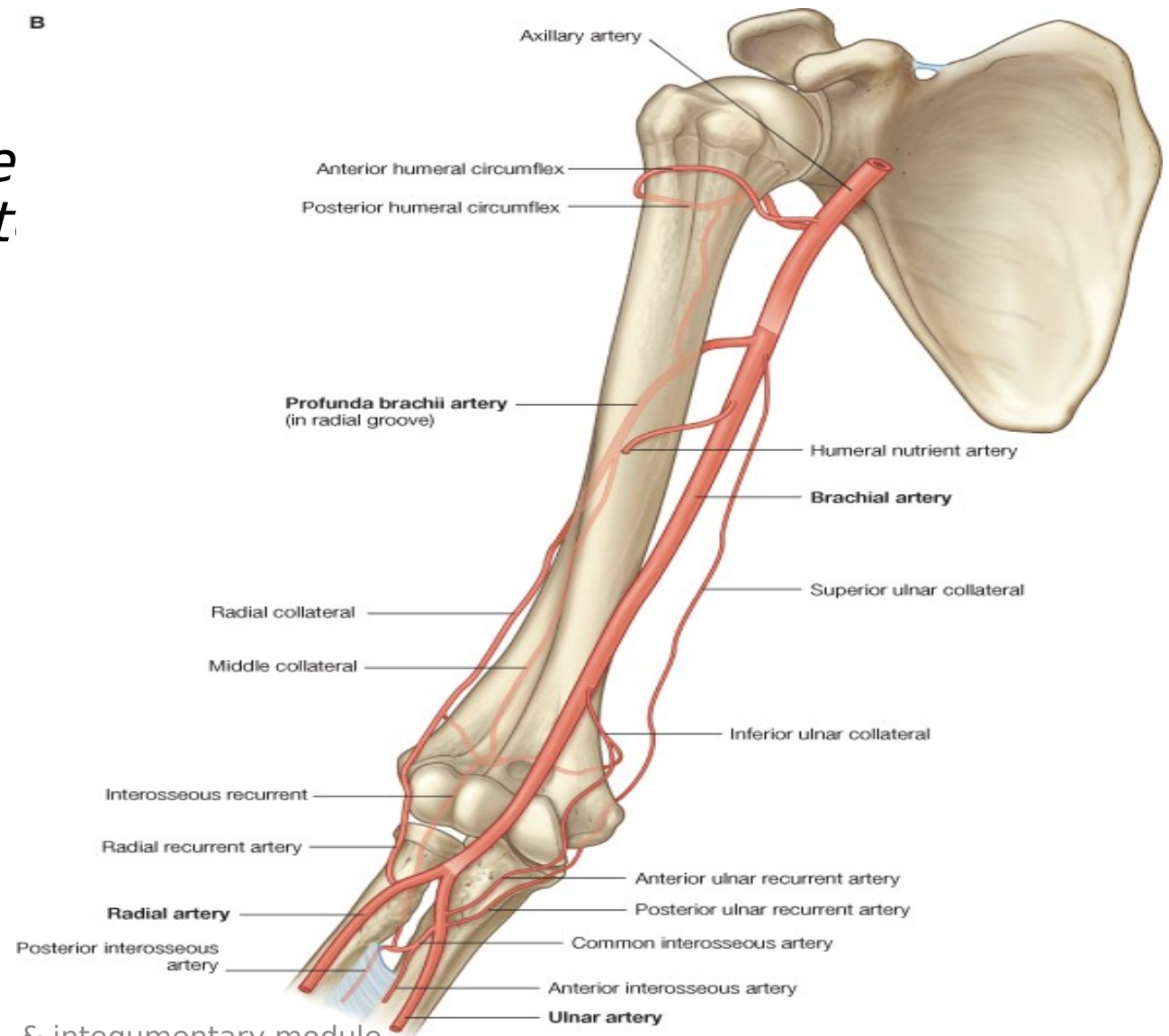
Profunda brachii



- Arise from posteromedial side of brachial
- Runs with radial nerve between long & medial heads of triceps to reaches spiral groove

Branches :

- 1- **Muscular** to triceps
- 2- **Ascending branch :** anastomose with descending of posterior circumflex
- 3- **Nutrient** to humerus
- 4- **radial collateral** to front of lateral epicondyle
- 5- **Middle collateral** to back of lateral epicondyle



Lecture Quiz



Which of the following arteries is a branch of brachial artery:

- a) Suprascapular artery
- b) Sup ulnar collateral artery
- c) Common interosseous artery
- d) Radial recurrent

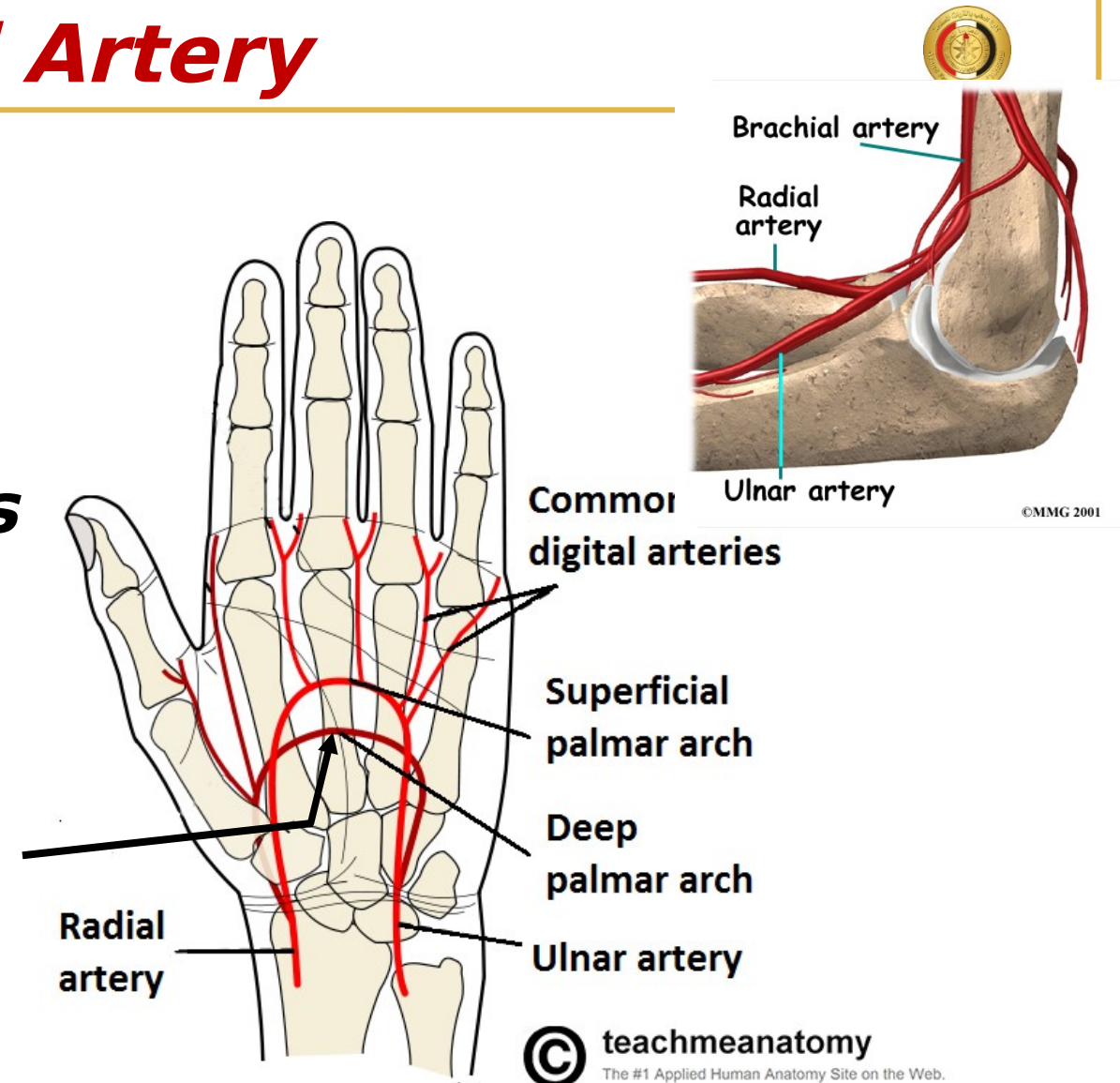
Radial Artery

□ Beginning:

- **One of 2 terminal branches of brachial artery**
- **At level of neck of the radius in cubital fossa**

□ End:

- **Continues in palm as deep palmar arch**



Where to feel the radial pulse ?

- ***LATERAL
TO THE
TENDON OF
FLEXOR
CARPI
RADIALIS***



Ulnar Artery

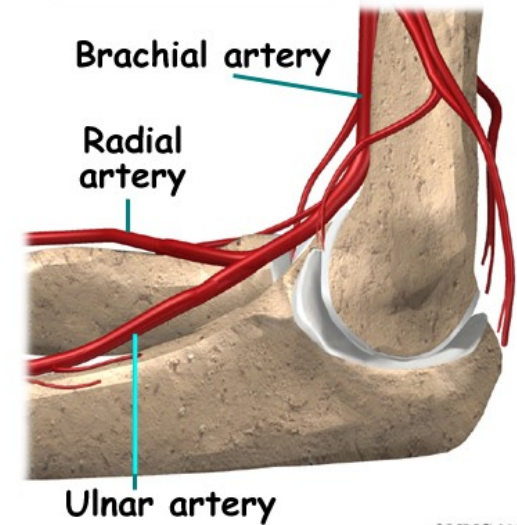
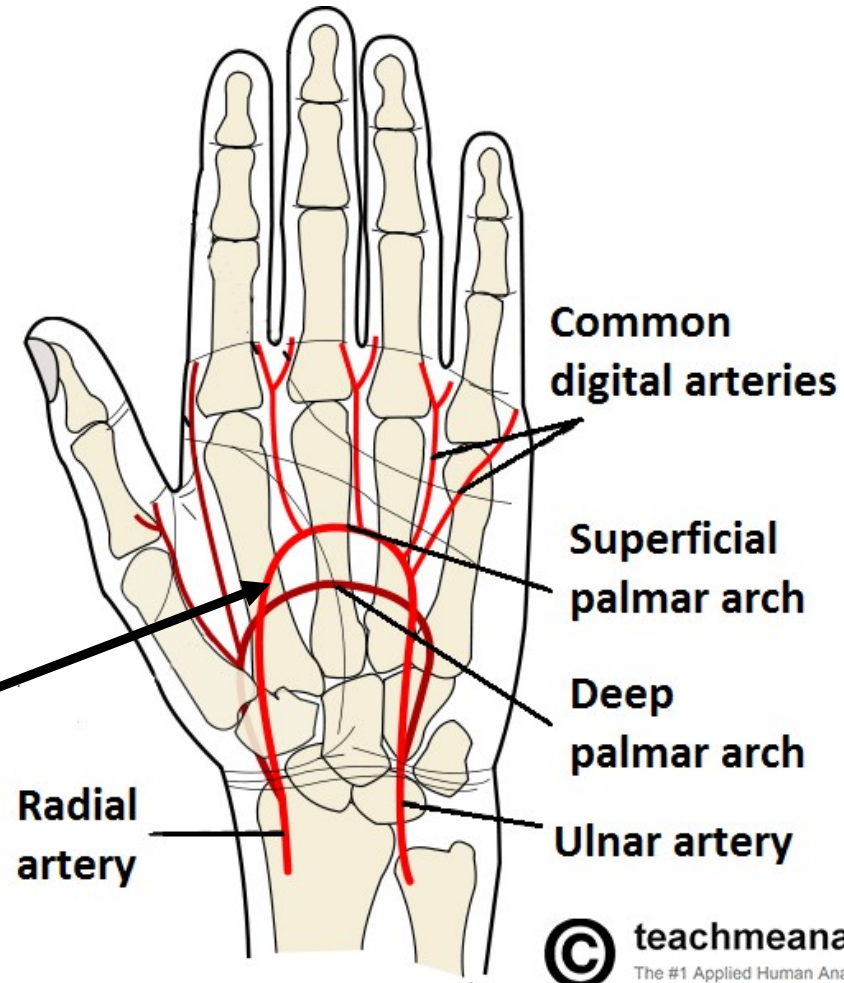


□ Beginning:

Opposite neck of radius
• Larger terminal branch of brachial artery

□ End:

Continues in palm as a
superficial palmar artery



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Branches of Ulnar Artery



- ***Muscular***
- ***2 ulnar recurrent (ant & post)***
- ***Common interosseous (gives ant & post inteross)***
- ***Ant & Post carpal***
- ***Deep palmar br***

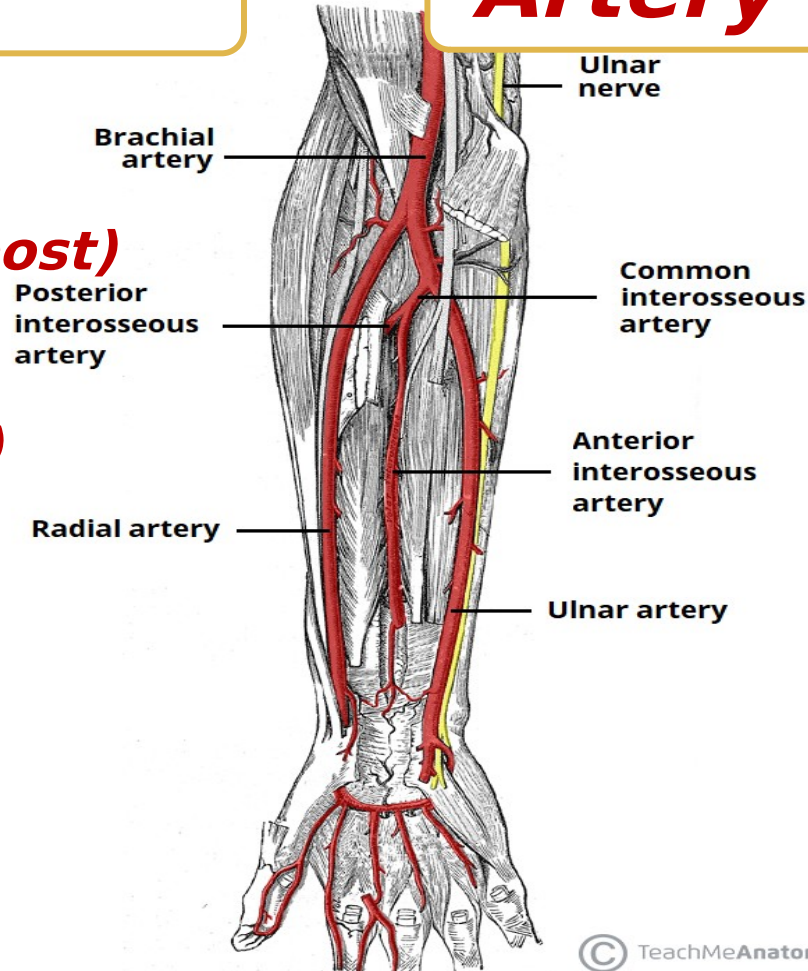
Ends by forming
Superficial palmar arch

Branches of Radial Artery



- ***Muscular***
- ***Radial recurrent***
- ***Ant & Post carpal***
- ***Superficial palmar br***

Ends by forming
Deep palmar arch



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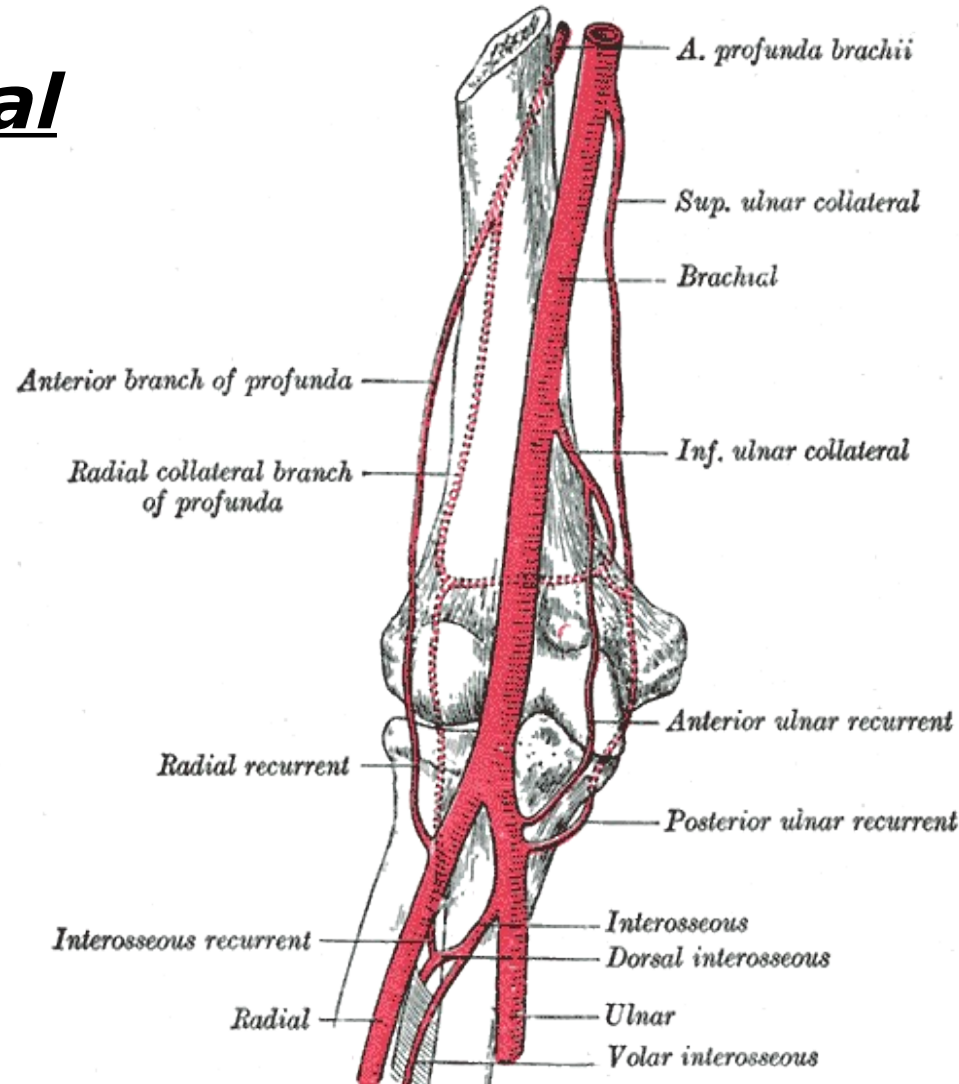


Anastomosis around elbow



Around the lateral epicondyle

1. **Ant descending**
2. **Post descending**
(profunda brachii)
3. **Radial recurrent**
(radial)
4. **Interosseus recurrent**



Around the medial epicondyle

1. **Sup ulnar collateral**
2. **Inf ulnar collateral**
(brachial)
3. **Ant ulnar recurrent**
4. **Post ulnar recurrent**
(ulnar)

Important in ligation of brachial a. below profunda

Palmar Arches

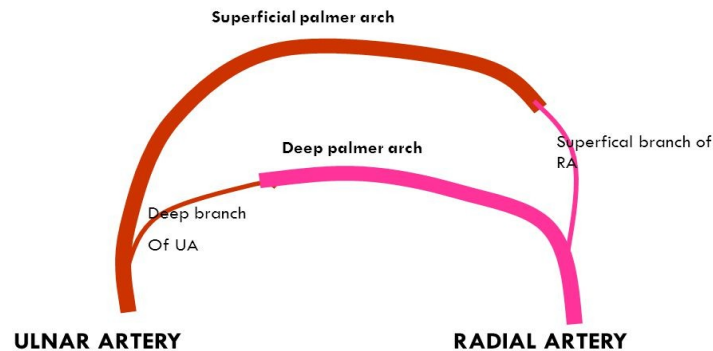
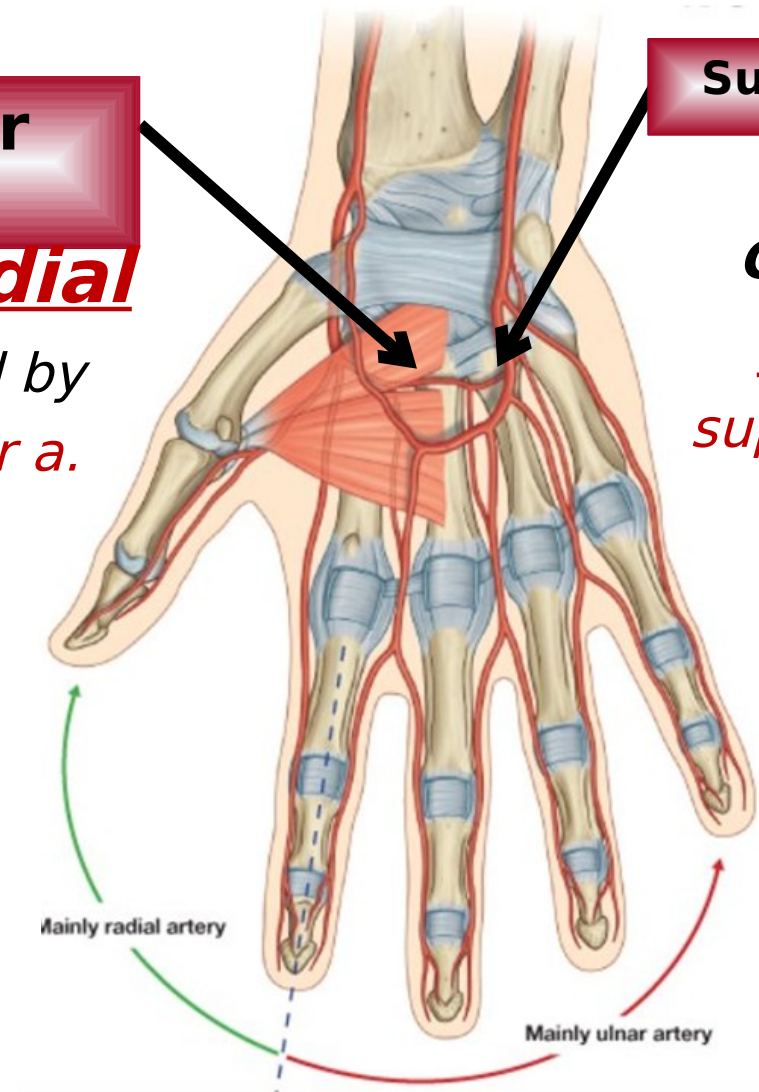


Deep palmar arch.

Continuation of radial artery completed by deep branch of ulnar a.

Superficial palmar arch.

Continuation of ulnar artery completed by superficial palmar br. of radial a.



Anastomosis around wrist



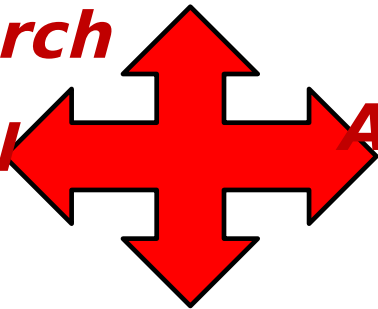
Anterior Carpal arch



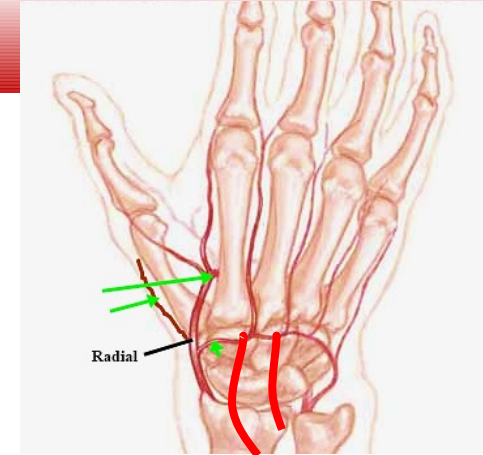
Recurrent br of Deep palmar arch

Ant carpal (Ulnar) **Ant carpal (Radial)**

Descending br of Ant inteross



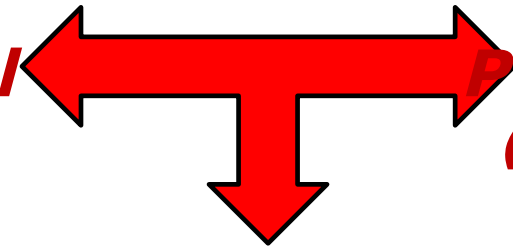
Posterior Carpal



post carpal (Ulnar)

post carpal (Radial)

Termination of Ant & Post inteross



Anastomosis around wrist



Anterior Carpal Arch

***Site:** on the front of wrist.

* **Sharing arteries:**

- 1- Ant carpal branch of ulnar artery.*
- 2- Ant carpal branch of radial artery.*
- 3. Descending branch of anterior interosseous artery.*
- 4. Recurrent branch from the deep palmar arch.*

Posterior Carpal Arch

***Site:** on the back of wrist.

* **Sharing arteries:**

- 1- Post carpal branch of ulnar artery.*
- 2- Post carpal branch of radial artery.*
- 3- Termination of anterior interosseous artery.*
- 4- Termination of posterior interosseous artery.*

SUGGESTED TEXTBOOKS



1. Gray's Anatomy for Students-4th Edition

Atlas of human anatomy by Frank H. Netter, 6th Edition



Thank you!